

# CWSF 2014 - Windsor, Ontario



## Cassey Deveau

### The Friendly Fire-Retardant

**Challenge:** Environment

**Category:** Senior

**Region:** Strait

**City:** Belle Cote, NS

**School:** Cape Breton Highlands Academy-Education Centre

**Abstract:** I planned to test different concentrations of alginate solutions to try and create a non-toxic, biodegradable, human and environmentally friendly flame retardant. I calculated the combustion energy released for trials with varying concentrations of the solution and found that the alginate solution did lower the energy released, therefore acting as a possible alternative to the current toxic flame-retardants.

#### Biography

I am extremely interested in being well involved in my school and community. I take part in the Cross Country, Volleyball, Basketball, Table Tennis, and Softball teams as well as many clubs and committees at school. I volunteer in the community with young girls, at the church hall, and through peer tutoring. I spend a lot of my time planning events as the president of my student council, or playing guitar and piano. I was inspired when I came across two articles that caught my attention. One described hazardous chemicals from North American flame-retardants, that were found in animals, and pregnant women in the Arctic who had never been exposed to them. Researchers believed that after house fires the jet stream carries the toxic smoke to other areas of the world. The second was an article from a Chinese journal that described the testing of calcium alginate fibers in fire-fighter suits to increase the flame retardancy. I would like to further the investigation by weaving fibers of alginate as it is more practical than the hardening solution. I advise other students to choose a topic that they are truly interested in as it improves the presentation of the project.

#### Awards

#### Value

Excellence Award - Senior - Bronze Medal Sponsor: Nuclear Waste Management Organization	\$100
University of Ottawa Entrance Scholarship Senior Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Ottawa	\$1 000
Western University Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: Western University	\$1 000
<b>Total</b>	<b>\$2 100</b>